Chapter 7 Demand Management Measures (BMPs)

RLECWD has signed two agreements pledging to implement Demand Management Measures: The California Urban Water Conservation Council (CUWCC) MOU was signed in 2001 and the Water Forum Agreements was signed in 2000. The demand management measures (DMM) are called Best Management Practices (BMPs) for Urban Water Conservation in both agreements. The BMPs are similar but not identical. RLECWD as implemented all the DMMs.

The implementation requirements are the greatest difference. Water Forum BMPs are currently mandatory, regardless of cost effectiveness. CUWCC BMPs may substituted with "just as effective as" actions that are cost effective, or not implemented if BMPs can be shown to be not cost effective.

RLECWD has faithfully provided water conservation reports to the Water Forum for all the years when they were required: 2001, 2002, 2003, and 2004. They are the basis for DMM activities reported in this document and are provided in Appendix C. BMP reports were not completed with the CUWCC.

DMMs have been implemented directly by the RLECWD and through participation in the RWA Water Efficiency Program (WEP) and its predecessor Sacramento Area Water Works Association Water Conservation Program. Since 2002, RWA has supported its members to meet BMP requirements with programs for:

- Public Information
- School Education
- Landscape Irrigation Efficiency, and
- Commercial, Industrial, Institutional Water Efficiency

RLECWD pays fees to RWA for the Water Efficiency Program. RLECWD fees and their distribution to different DMMs are shown in the following table:

Table 13 DMM Distribution of Fees Paid to RWA Water Efficiency Program

	2001	2002	2003	2004	2005
RLECWD fee paid to RWA WEP	$1,970	$1,800	$7,210	$ 8,131	$4,361
Proportioned amount for BMP 5 Irrigation Efficiency	$ 22	$ 158	$ 735	$ 1,736	$ 257
Proportion amount for BMP 7 Public information	$1,685	$1,197	$4,465	$ 3,551	$1,849
Proportion amount for BMP 8 School Education	$ 263	$ 180	1,407	$ 945	$ 961
Proportion amount for BMP 9 Commercial, Industrial, institutional	$ -	$ 164	$ -	$ 1,900	$1,089

RLECWD water efficiency efforts, activities and accomplishments for each of the DMMs are described on the following pages. RLECWD has implemented water efficiency programs since the early 1990s. Since 2001, the district has recorded in the customer data base which customers participated in specific water efficiency programs.

A. (BMP 1) Interior and Exterior Water Audits and Incentive Programs for Single Family Residential, Multi-Family Residential and Institutional Customers.

RLECWD provides the following BMP 1 services:

1. Has trained water auditors on staff or available through cooperative agreements with other purveyors.
2. Prepared and made available, as needed, multi-lingual interior and exterior water audit materials for customers.
3. Prepared and made available to customers seasonal climate-appropriate irrigation information.
4. Provides audits that may include device installation by customer (showerheads, faucet aerators, etc.), identification of water-use problems, recommend repairs, instruction in landscape principles (hydrozones, ET, etc.), irrigation timer use and, when appropriate, meter reading.
5. Provides program participants with seasonal irrigation schedules by hydrozone and/or station.

Additionally RLECWD:

1. Annually identify the top 20% of water-users, not previously audited, in each customer type and offer them water-use reviews (audits).
2. Offers, through bill inserts or other means, water-use reviews to all customers.

Table A - Residential Surveys - Actual Implementation

Actual DMM/BMP #1 Implementation	2001	2002	2003	2004	2005 projected
Single Family Surveys	3	15	5	31	25
Multi Family Surveys	0	0	0	0	0
Actual Expenditures	NA	NA	NA	NA	NA
Actual Water Savings - AFPY	0.1008	0.504	0.168	1.0416	0.84

Water savings is calculated at 30 gallons per site per day (source CUWCC "BMP Costs & Savings Study," 2000) and represents the savings for surveys installed in a given year and are not cumulative for surveys conducted in previous years. If surveys were provided for all 4,200 residential customers, demand might be reduced by approximately 141 AFPY for a few years. Surveys would have to be repeated to maintain the savings.

Since the WFA currently mandates implementation of BMPs even if they are not cost effective, the cost effectiveness is not evaluated.

Surveys are marketed through messages on customer bills and in conjunction with RWA advertisements. Survey efforts are tracked through the customer database.
The same levels of activities (average of 15 sites per year) are expected annually for the next five years.

B. BMP 2 PLUMBING RETROFIT OF EXISTING RESIDENTIAL ACCOUNTS

RLECWD provides the following BMP 2 services:

1. Offer to all customers, through bill inserts or other means, retrofit kits which include, but are not limited to, high quality low-flow showerheads, faucet aerators and toilet leak detection tablets
2. Offer toilet leak test kits to all customers as part of the retrofit kit.
3. Investigate partnership programs with local energy utilities to provide water conservation audits, materials and devices

Table B - Residential Plumbing Retrofit - Actual implementation

Actual DMM/BMP #2 Implementation	1992-2001	2002	2003	2004	2005 projected
# Single and multi family residential devices	102	126	79	178	69
Actual Expenditures	NA	NA	NA	NA	NA
Actual Water Savings - AFPY	0.002	0.002	0.001	0.003	0.001

Water savings calculations assume 50 % of kits installed, and savings of 11.6 gallons per site per day for installed kits (source CUWCC "BMP Costs & Savings Study," 2000). The table represents the savings for plumbing retrofit kits provided in a given year and are not cumulative for kits provided in previous years.

The same levels of activities (average of 120 kits provided) are expected annually for the next five years. Since the WFA currently mandates implementation of BMPs even if they are not cost effective, the cost effectiveness is not evaluated.

From US Census data for 1990 and 2000, there were approximately 3,600 residential accounts in 1992. At the projected rate of savings used in Table B, retrofitting home plumbing fixtures with kits in all pre-1992 housing would save a total of approximately 0.1 acre foot per year. This is a very small portion of the district's water annual demand.

C. BMP 3 - DISTRIBUTION SYSTEM WATER AUDITS, LEAK DETECTION AND REPAIR

RLECWD conducts the following efforts to reduce losses from its distribution system:

1. Conducts an annual system water audit, determining the difference between production and sales.
2. Annually updates a 'system map' of: type, size and age of pipes; pressures; record of leaks; etc.; with historic data
3. Conducts an ongoing meter calibration and replacement program.

Table C1 Meter Replacement

	2002	2003	2004	2005
# Meters Replaced	180	160	135	213
Replacement cost	$57,000	$38,000	$37,000	$56,000

Meter replacement scheduled to continue for 12 more years until all older meters are replaced.

Table C2 Future Meter Replacement

	2006	2007	2008
# Meters to be Replaced	387	350	350
Estimated Replacement cost	$130,000	$135,000	$140,000

Replacement of old meters has the potential advantages of:

- Providing more accurate consumption readings to the utility and the customer.
- Increasing the amount of revenue to the utility.
- Reducing the amount of non-revenue water loss.
- Reducing the amount of "unaccounted for water," which may have mistakenly been identified as leak losses.
- Providing additional incentive for customers to be more water efficient. without changes in water rates.

4. Operates an ongoing leak detection and repair program focused on high probability leak areas identified by the system map.
5. Will complete a system wide leak detection program, repeated: when the system water audit determines losses to be greater than 10%; when the losses are less than 10% if the program is determined to be cost effective.

Table C3 - System Water Audits, Leak Detection, Repair – Actual Implementation

	2000	2001	2002	2003	2004	2005
Water produced	3,329	3,266	3,394	3,161	3,398	NA
Metered Water demand	3,027	3,058	2,891	2,805	2,919	NA
Percent Non Revenue Water (Unaccounted for Water)	9%	6%	15%	11%	14%	NA

A comparison of water produced and metered water billed to customers yields a percentage of non-revenue water shown in Table C3. Water production in Table C3 may not agree precisely with other production tables due to adjustments for meter reading schedules. Non-revenue water is a term newly adopted by the American Water Works Association to more accurately describe what was formerly known as "unaccounted for water." Non-revenue water includes: fire fighting, main flushing, malfunctioning relief valves, leaks from system pipes and meters, and customer water deliveries below the threshold of meter flow detection.

In addition to the meter replacement program, future loss reduction efforts will:

- Annually compare customer metered consumption with water supply production to determine if non-revenue water exceeds ten percent of system production. Conduct detailed water audits as required to identify sources of apparent losses such as production meter inaccuracies, leaky check valves, or data errors.
- Repair identified leaks.
- Replace old and leaky pipe sections as part of the capitol improvement program.
- Maintain an average budget for this program at current levels.

A more aggressive and more expensive water loss reduction program may be able to reduce losses to five percent per year for existing pipe sections. Newer pipe sections associated with new developments should have lower loss rates than the older pipes.

D. BMP 4 NON-RESIDENTIAL METER RETROFIT

Since its creation in 1948, all RLECWD customers have been metered. In 2005, Rio Linda/Elverta Community Water District has 4,546 customers. All are fully metered and usage billed using volumetric pricing. Currently, there are eight customers with dedicated landscape irrigation meters.

All new customers will be metered and billed using volumetric pricing when they are connected to the distribution system.

Since all customers are already metered, no additional water savings are expected from this BMP.

E. BMP 5 LARGE LANDSCAPE WATER AUDITS AND INCENTIVES FOR COMMERCIAL, INDUSTRIAL, INSTITUTIONAL (CII), AND IRRIGATION ACCOUNTS

RLECWD provides the following BMP 5 services:

1. Identify all irrigation accounts and commercial, industrial, and institutional (CII) accounts with landscapes of one acre and larger and record that information in the customer database.

2. Provide certified and/or trained landscape water auditors on staff or available through cooperative agreements.
3. Prepare and distribute irrigation system materials, seasonal climate-appropriate information on irrigation scheduling and offer training for customers and landscape workers.
4. Develop seasonal climate-appropriate information to determine irrigation schedules, provide that information to the customers with one acre or larger landscapes.
5. Installed climate appropriate water efficient landscaping at landscaped Rio Linda/Elverta Community Water District facilities in 2005.
6. Directly contact all irrigation accounts and CII accounts with one acre and larger landscapes, not previously audited, and offer them landscape water-use reviews (audits).
7. Offers, through bill inserts or other means, landscape water-use reviews to all customers.
8. Provide audits that consist of a system review, to identify necessary irrigation system repairs, and, once repairs have been completed, a water-use review including measurement of landscaped area. Survey reports are provided to the customers and a paper copy retained in the office. Notations in the customer data base indicate which customers have participated in which water efficiency programs.
9. Provide program participants with regular reminders to adjust irrigation timer settings.

Table E - Large Landscape - Actual Implementation

Actual DMM/BMP #5 Implementation	2001	2002	2003	2004	2005 projected
#dedicated irrigation accounts	8	8	8	8	8
# CII accounts	121	121	133	133	133
# irrigation budgets developed	0	1	0	1	1
# irrigation surveys completed	0	1	0	1	1
# follow-up visits	0	0	0	0	0
Actual Expenditures	NA	$ 2,350	$2,500	$9,253	$5,601
Actual Water Savings - AFPY	NA	NA	NA	NA	NA

RLECWD participated in RWA's 2002 successful Proposition 13 grant application for landscape irrigation efficiency capitol improvements. Rio Linda's staff helped to design the new improved efficiency irrigation system which was installed in late 2004 and 2005. The actual water savings of the improvements will be determined in the next two years with metered demand data.

In addition to its own activities, RLECWD participates in the RWA WEP landscape irrigation efforts which provide:

- A telephone hot Line with weekly updated ETo information from the CIMIS Fair Oaks Station (#131).
- Maintenance and calibration of the CIMIS Fair Oaks Station.
- Spring and autumn irrigation workshops for home owners
- Region-wide newspaper advertisements that market irrigation surveys by local water suppliers.
- Spring and autumn radio and newspaper notices to adjust irrigation timing
- Reprints of the booklet "Rules of Thumb for Water-Wise Gardening" instructing hydrozone techniques
- Cooperative surveys at retail landscape nurseries with UC Cooperative Extension Master Gardeners to determine effective landscape outreach to homeowners.
- Bill stuffers mailed to all SMUD customers advocating proper evening timing to operate irrigation systems.

RLECWD intends to maintain the same levels of activities (75% of part time staff and 1 full irrigation account audit per year) for the next five years.

To promote the effectiveness of landscape irrigation conservation ordinances, RLECWD participates with other Water Forum stakeholders and:

1. Attends landscape task force meetings with other local governments and water purveyors, the building and green industries and environmental / public interest groups to review the existing ordinance to determine if it is at least as effective as the Model Water Efficient Landscape Ordinance, and to monitor, and revise, when applicable, the ordinance.
2. Participate in the landscape task force's review of the implementation of the ordinance, including the landscape plan review and final inspection/ certification process.
3. Participate in the landscape task force's determination if program effectiveness is diminished by city/county staff time constraints, budget or lack of landscape knowledge/expertise.

The task force completed its investigation in 2005and its report should be soon available.

F. BMP 6 High-efficiency washing machine Rebate Program

- RLECWD conforms to CUWCC BMP 6 to offer rebates for high efficiency clothes washers where electric utilities offer a rebate program. The Sacramento Metropolitan Utility District (SMUD) offers its electric customers rebates ranging from $75 to 125 for high efficiency clothes washers. RLECWD coordinates with SMUD to offer an additional $50 rebate to RLECWD customers. SMUD and RWA coordinate to mail all SMUD customers bill stuffers marketing water efficient clothes washers. Pacific Gas & Electric Co. (PG&E) offers natural gas customers rebates on an intermittent basis. PG&E's rebates currently range from $35-75.

Specific marketing with RWA includes:

- Point of purchase water efficiency appliance ads distributed in stores with SMUD.
- Explore Energy Star cooperative effort with PG&E.
- SMUD provides bill inserts that RLECWD mails to water customers.

Table F - High Efficiency Washing Machines - Actual Implementation

Actual DMM/BMP #6 Implementation	2001	2002	2003	2004	2005 Projected
$ per rebate	50	50	50	50	50
# rebates paid	5	6	9	15	13
Actual Expenditures	250	300	450	750	650
Actual Water Savings - AFPY	0.081	0.097	0.145	0.242	0.209

The displayed annual water savings (5,250 gallons per year per machine, source CUWCC "BMP Costs & Savings Study," 2000) represents the savings for machines installed in a given year and are not cumulative for machines installed in previous years.

RLECWD expects to continue the high efficiency clothes washer incentive program at the current level of $50 per rebate and ten rebates per year. If all the 4200 existing washing machines in the RLECWD service area (one per single family account and one per multi-family account) were replaced with high water efficiency models, the potential annual water savings would be approximately 65 acre feet per year.

G. BMP 7 – Public Information Programs

RLECWD provides the following BMP 7 Public Information Actions:

1. Uses utility bill inserts or messages on payment notices; and
2. Provides information on customers' bills showing use in gallons per day for the last billing period compared to the same period the year before.
3. Provides a Water Efficiency Landscape garden beginning in 2005.

Additionally RLECWD participates in the RWA WEP that provides a number of public information products. Public information is a form of marketing basic to public acceptance of water efficiency concepts and all BMPs. However, the CUWCC views that water savings for this BMP is not readily quantifiable.

RLECWD fees contributed towards public information are shown on Table 11 "DMM Distribution of Fees Paid to RWA Water Efficiency Program".

Public Information products and services provided by the Regional Water Authority Water Efficiency Program during the period 2002-2005 include:

- Operate and maintain the Fair Oaks CIMIS station to provide ET data
- Support CIMIS hot line information by telephone

- Autumn radio broadcast public service announcements for homeowners and landscape managers to "Water with the Weather" by turning off sprinklers during rainy season
- May 2004 region wide newspaper advertisements
- Spring 2 weeks advertisements on News10 TV
- Provide booklet "Rules of Thumb for Water Wise Gardening" and "Watering Tips for Beautiful Gardens" to Water Suppliers for distribution to new customers
- Point of purchase water efficiency appliance posters distributed in stores with SMUD
- Explore Energy Star cooperative effort with PG&E
- Cosponsor 2004 Eco-Landscape Symposium
- Present 3 spring and 3 autumn Integrated Landscape Workshops for homeowners
- Cosponsor Landscape Irrigation Auditor Workshop with ITRC & IA
- Cosponsor three Irrigation Association professional workshops
- RWA website provides ET information for various sized landscapes
- Provide water efficiency materials for RWA exhibits;
- Present booth at Salmon Festival
- Works cooperatively and supports the Master Gardeners of Sacramento County.
- Supports the Fair Oaks Horticultural Center and the Sacramento County Cooperative Extension instruction for water efficient landscapes
- Supported local agency workshops and exhibits
- Develop and issued press releases describing success of Rinse and Save program;
- Maintain water education elements in RWA website
- Provides water efficiency training to businesses at SMUD
- Present efficient landscape display at Northern California Landscape Expo.

H. BMP 8 - School Education

The RLECWD specific program includes:

1. Offering tours of District facilities to elementary schools in the District's service area; and
2. Working with schools served by the District to promote school audits, reduced water bills, and innovative funding for equipment upgrades.

Additionally, RLECWD financially supports RWA's school education projects. .

1. *Be Water Wise*, presented by the Regional Water Authority and The Sacramento Bee's Newspapers in Education (NIE) program, teaches kids to practice water efficiency in every-day activities. Students learn where water comes from and ecology through math, science and the arts, fun puzzles, investigative work and activities. Approximately 5,000-6,000 students per year in grades K-8 participate in the program.

Be Water Wise includes:

- A newspaper-style student supplement called "Water." The supplement is written by an award-winning environmental educator and includes fun activities and illustrations. It tells the never-ending story of the water cycle.
- An updated *Be Water Wise* teacher's guide with a regional focus and lessons based on California state teaching standards.
- An NIE subscription to The Sacramento Bee, including a class set of newspapers delivered to your school on four consecutive Mondays in April and May (to coincide with Water Awareness Month in May).
- An opportunity for students to win prizes by participating in a contest designed to reinforce water saving practices at home. Prizes include T-shirts and cash awards.
- A colorful "California Waterways Map" provided by the California Department of Water Resources.
- A "Mr. Leaky" water conservation activity book for grades K-4.
- There is no cost to participate in this program because the Regional Water Authority sponsors the program.

2. RWA and the Sacramento County Stormwater Management Program jointly cosponsor “The Great Water Mystery.” During 2003, 2004 and 2005 approximately 75-100 presentations were presented at more than 70 different schools to a total of 15,000 students. Presented by the South Yuba River Citizens League, “The Great Water Mystery” is an interactive presentation that uses an engaging mystery story to teach California Science Standards such as the water cycle, watersheds, resources management, water conservation and pollution prevention. Science standards included are: Earth Science (K-5), physical science (K, 1, 3), Resources (6), National Science Standards (K-5) and Standards B, C, D, and F.

3. RWA presents an expansive water education section on its website (www.rwah2o.org).

RLECWD provided the following funding for educational material during the last five years. A portion of the fees paid to the RWA WEP were also devoted to School Education.

Table H – School Education - Actual Implementation

	2001	2002	2003	2004	2005
RLECWD direct purchase educational supplies	$ 1,858	$ 916	--	$ 2,967	$ 938
Portion of RLECWD fees to RWA for School Education	$ 263	$ 180	1,407	$ 945	$ 961
Total RLECWD School Ed contribution	$2,121	$1,096	$1,407	$3,912	$1,899
# of RWA students reached	5,000	5,000	6,100	25,000	25,000
RLECWD portion of students reached	56	438	622	5,336	1,472

Through cooperative cost sharing programs, RWA has achieved an average cost per student of approximately $2.

School Education is a vital component to teach future generations the importance of water efficiency. However the CUWCC views that this BMP is not readily quantifiable. Teacher feedback and repeat requests for the RWA programs year after year indicate a successful desirable student outreach.

RLECWD will continue the school education program during the next five years (approximately 75-100 presentations in 70 different schools per year through RWA's School Education Program.

I. BMP 9 Industrial Commercial and Institutional customers.

For this BMP RLECWD:

1. Annually identifies the top 10% of commercial water users and top 10% or industrial water users, and directly contacts their representative and offers them water-use reviews (audits).
2. Has contracted with RWA to provide trained commercial/industrial water auditors through cooperative agreements.

For the years 2001-2003, no CII customers accepted the water efficiency survey offer. No incentives were offered. For 2004 and 2005, Rio Linda contracted with RWA to participate in the CUWCC Rinse and Save Program aimed at food service establishments. The incentive to customers was free replacement and installation of high water using

dishwashing spray nozzles with high efficiency dishwashing spray nozzles. In addition to replacing the nozzles, the installers conducted surveys of other water using appliances at the sites. Eight RLECWD customers participated at a total cost to RLECWD of $402. Based upon PG&E gas rates, RLECWD water rates and unit savings values from CUWCC, the estimated water and energy savings for all three customers were:

Table I - Industrial Commercial and Institutional – Rinse and Save Effectiveness

Annual Water Savings Gallons	Annual Water Savings Acre Feet	Commercial Retail Water Rate $ per CCF	Annual Retail Water Value	Annual Energy Savings Therms.	Annual Saved Energy Value	Combined Water & Energy Savings to Customer
560,000	1.72	$0.57	$404	2,680	$2,127	$2,531

Additionally RLECWD addresses non residential toilet replacement:

1. Identify all non-residential customers, estimate the approximate number of non-ULF toilets at each account, and rank them by high, medium or low use (e.g., restaurant toilets are high use, warehouse toilets are low use)
2. If possible, establish a cooperative district / sanitation district ULF rebate program
3. Annually offer, through direct mail or other direct communication, ULF rebates to all non-residential accounts which do not yet have ULF toilets, with special focus on those with the highest number of high-use non ULF-toilets.
4. Offer the necessary incentive (which may include rebates, no interest loans, vouchers, billing surcharges/rebates, etc.) to insure that at least 10 percent of non-residential non-ULF toilets are replaced with ULF toilets each year, with a final installation target of 90 percent of all non-residential toilets being ULFs within ten years
5. Consider monitoring the change in water use at metered-accounts which install ULF toilets

RLECWD will continue the same value of services (approximately $500 per year) for CII customers during the next five years. Future water savings may be estimated after a careful review of how RLECWD business customers use water and identification of cost effective water efficiencies applicable to these customers.

J. Wholesale Agency Programs

RLECWD is a retail water purveyor and does not sell water on a wholesale basis. Therefore RLECWD does not provide water efficiency services to other agencies.

K. BMP 11 Conservation Pricing

Rio Linda/Elverta Community Water District has been fully metered since its creation in 1948 and uses volumetric billing for water deliveries. Water rates schedules are based on meter size and not type of customer. Residentially customers typically use 5/8", ¾" and 1" meters, commercial customers typically use 1.5", and 2" meters, dedicated large landscapes and industrial customers may use meters up to 3" and 4" in size. RLECWD does not provide sewer services. Sewer Services are provided by the Sacramento Regional County Sanitation District (SRCSD) which charges residential and small commercial customers with a flat (non-volumetric) rate.

Table K – Rio Linda Elverta Community Water District
Water Rate Schedule for 2006

Service Charges

Water Service – Fees for water service from the District Water System shall be as indicated below based upon meter size servicing the premises and includes 600 cu.ft. of water:

Meter Size	Bi-Monthly Service Charges
5/8"	$26.00
3/4"	$31.20
1"	$46.80
1-1/2"	$91.00
2"	$145.60
3"	$273.00
4"	$455.00

Plus any usage over 600 cu. ft., charges per 100 cubic feet or portion thereof as follows:

Meter Size	Cubic Feet Used		
Rate Per 100	$0.43	$0.54	$0.68
	Tier 1	Tier 2	Tier 3
5/8"	601 – 2,600	2,601 – 15,600	15,601 +
	Tier 1	Tier 2	Tier 3
3/4" – 1-1/2"	601 – 5,800	5,801 – 44,800	44,801 +
	Tier 1	Tier 2	Tier 3
2" – 4"	601 – 55,200	55,201 – 286,000	286,001+

The bi-monthly service charge for **Standby Fire Protection Services** shall be $7.60 per inch diameter for the service pipe. Every two (2) months.

SVC Code	Charge
FP4 = 4"	$ 30.40
FP6 = 6"	$ 45.60
FP8 = 8"	$ 60.80
F12 = 12"	$ 91.20
F14 = 14"	$106.40

One (1) Cubic Feet water = 7.48 gallons, i.e. gallons / .748 = total cu.ft.

L. BMP 12 -Water Conservation Coordinator

Elizabeth Myers is a full-time staff member of RLECWD and oversees the district conservation efforts. Ms Myers is an AWWA Certified Water Conservation Practitioner, Landscape Irrigation Auditor and has actively participated in the RWA Water Efficiency Program Advisory Committee. During 2004 and 2005 Carol Roston served for part of the year to provide landscape irrigation and other water efficiency services.

Table L – Conservation Coordinator – Actual Implementation

	2001	2002	2003	2004	2005
Full time staff at 10 % to water efficiency	$7,280	$7,280	$7,280	$7,280	$7,280
Part time staff	None	None	None	$11,500	$1,100
Total	$7,280	$7,280	$7,280	$18,780	$8,380

RLECWD will continue the same level of annual services: two staff, each part time to water efficiency for approximately $20,000 during the next five years.

M. BMP 13 - Water Waste Prohibition

Water waste prohibition measures have long been included in RLECWD ordinances. A copy is attached as Appendix D. The water waste measures:

- Prohibits the use of open hoses
- Prohibits washing sidewalks, driveways and other paved services
- Requires swimming pools, spas, fountains and ponds to use re-circulating pumps.
- Requires repair of plumbing leaks, and correction of sprinklers and other water features to the satisfaction of the District.

New construction and replacement that require a building permit are required to:

- Use ultra-low flow toilets, (defined as 1.6 gallons or less).
- Place a pressure reducing valve on the main supply line from the meter which reduces household pressure to 50 PSI or less, where normal system pressure exceeds 70 PSI;

- Insulate all hot water pipes and/or a hot water circulating system; and
- Install low-flow kitchen and lavatory faucets and shower heads.

For new developments landscape are required to comply with the regulations adopted by the County of Sacramento pursuant to the Water Conservation in Landscaping Act (Government Codes Sections 65591 et seq.). Continued conformance to the provisions thereof shall be a prerequisite for initiation and continuation of water service.

The ordinance specifies penalties, including warnings, fines and discontinuation of service.

Not specifically addressed are:

- Single-pass cooling systems
- Car wash recirculation systems,
- Recirculation systems in Laundromats

Water softeners are not regularly included in home water surveys.

Table M - Water Waste - Actual Implementation

	2001	2002	2003	2004	2005
# Water waste site visits	11	9	7	24	10
Expenditure costs unavailable (mixed with conservation and field staff)	NA	NA	NA	NA	NA

RLECWD will continue the same level of services (approximately 12 site visits per year) for water waste calls during the next five years.

N. BMP 14. Ultra Low Flush Toilet Replacement Program

Residential toilet replacement programs (both single family and multi family) are voluntary for water providers under the Water Forum Agreement. RLECWD has chosen to offer incentives for ULFT toilet replacement beginning in 2004. No change in this policy is expected within the next five years.

RLECWD does support the regional effort to improve water efficiency through fees paid to the RWA Water Efficiency Program. Water providers subscribing to RWA's toilet replacement program coordinate with the SRCSD to mail bill stuffers advocating ULFT toilet replacement to all 270,000 SRCSD customers, including those in the RLECWD service area,

In 2003, 2004, 2005 SRCSD mailed 270,000 bill stuffers to SRCSD customers marketing toilet replacement with ULFTs.

Table N – Toilet Replacement – Actual Implementation

	2001	2002	2003	2004	2005
$ per Rebate				$75	$75
# rebates paid to single family customers	--	--	--	3	2
# rebates paid to multi family customers	--	--	--	0	0
Actual Expenditures	--	--	--	$275	$150
Actual water savings - AFPY	0	0	0	0.10	0.07

Simplified method of determining water savings is multiplying number of toilets times 29.9 gallons per toilet per day (source: "CUWCC BMP Cost & Savings Study," 2000).

RLECWD expects to continue the ULFT retrofit rebate program ($75 per rebate and ten rebates per year) for the next five years to a mix of single family, multi-family and commercial customers. Ten toilet retrofits per year would save approximately 0.3 AFPY.

In 1992, laws and plumbing codes changed to require that only 1.6 gallon per flush toilets (ULFT) be sold nationwide. Therefore only toilets installed before 1992 are targets for replacement. CUWCC studies showed that building owners annually replace approximately four percent of pre 1992 toilets in the course of ordinary remodeling and repairs. Of the approximately 3,600 residential accounts existing in 1992, some 2,100 households remain with approximately 4,100 high flush volume toilets. Replacing all of these toilets with ULFTs may save approximately 35 acre feet per year.